

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

THE GILLETTE COMPANY,)	
)	
Plaintiff,)	
)	
v.)	C.A. No. 15-1158-LPS-CJB
)	
DOLLAR SHAVE CLUB, INC., et al.,)	
)	
Defendants.)	

DEFENDANTS' ANSWERING CLAIM CONSTRUCTION BRIEF

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TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	“AMORPHOUS MATERIAL” (CLAIMS 1, 20, 24)	1
A.	The Intrinsic Evidence Supports Defendants’ Construction, Not Gillette’s.....	2
B.	Gillette’s Construction Finds No Support In The Extrinsic Evidence.....	5
III.	“OVERCOAT LAYER OF A CHROMIUM CONTAINING MATERIAL” (CLAIMS 1, 20, 24, 28, 35).....	8
A.	This Disputed Term Warrants Construction By The Court, Not The Jury	9
B.	Contrary To Gillette’s Arguments, The Overcoat Term Has No “Ordinary Meaning”	9
C.	Gillette Ignores Controlling Intrinsic And Extrinsic Evidence That Shows The Overcoat Layer Is An Intermediate Adhesive Layer	10
IV.	“DOPED WITH ANOTHER ELEMENT” (CLAIMS 19, 23, 28, 35).....	18
A.	Gillette Ignores The Plain And Ordinary Meaning Of The Term Doped, Which Was Not Altered By Any Intrinsic Evidence	18
V.	CONCLUSION.....	20

TABLE OF AUTHORITIES

Cases

<i>Cephalon, Inc. v. Watson Pharm., Inc.</i> , 769 F. Supp. 2d 761 (D. Del. 2011)	6
<i>Copy Protection LLC v. Netflix, Inc.</i> , C.A. No. 14-365-LPS, 2015 WL 4639954 (D. Del. Aug. 5, 2015)	15
<i>Ecolab, Inc. v. Envirochem, Inc.</i> , 264 F.3d 1358 (Fed. Cir. 2001)	16
<i>Funai Elec. Co. v. Daewoo Elecs. Corp.</i> , 616 F.3d 1357 (Fed. Cir. 2010)	16
<i>Hill-Rom Services, Inc. v. Stryker Corp.</i> , 755 F.3d 1367 (Fed. Cir. 2014)	15, 16, 20
<i>Honeywell Intern. Inc. v. Universal Avionics Systems Corp.</i> , 488 F.3d 982 (Fed. Cir. 2007)	10
<i>ICU Med., Inc. v. Alaris Med. Sys., Inc.</i> , 558 F.3d 1368 (Fed. Cir. 2009)	17
<i>Indacon, Inc. v. Facebook, Inc.</i> , 824 F.3d 1352 (Fed. Cir. 2016)	10
<i>Intellectual Property Development, Inc. v. UA-Columbia Cablevision of Westchester, Inc.</i> , 336 F.3d 1308 (Fed. Cir. 2003)	18
<i>Irdeto Access, Inc. v. Echostar Satellite Corp.</i> , 383 F.3d 1295 (Fed. Cir. 2004)	10
<i>O2 Micro Int’l. Ltd. v. Beyond Innovation Tech. Co., Ltd.</i> , 521 F.3d 1351 (Fed. Cir. 2008)	9
<i>Pfizer Inc. v. Dr. Reddy’s Labs. Ltd.</i> , 2011 WL 767849 (D. Del. Feb. 28, 2011)	7
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005)	passim
<i>Praxair, Inc. v. ATMI, Inc.</i> , 543 F.3d 1306 (Fed. Cir. 2008)	15
<i>Profectus Tech. LLC v. Huawei Tech. Co.</i> , 823 F.3d 1375 (Fed. Cir. 2016)	8

<i>Solarex Corp. v. Arco Solar, Inc.</i> , 805 F. Supp. 252 (D. Del. 1992)	7
<i>St. Clair Intellectual Property Consultants, Inc. v. Apple, Inc.</i> , C.A. No. 10-982-LPS, 2012 WL 3238252 (D. Del. Aug. 7, 2012)	15
<i>Takeda Pharm. Co. Ltd. et al. v. Handa Pharm., LLC</i> , 2012 WL 1243109 (N.D. Cal. April 11, 2012)	6
<i>Tech. Properties Ltd. LLC v. Huawei Techs. Co.</i> , -- F.3d. ---, 2017 WL 836597 (Fed. Cir. Mar. 3, 2017)	3
<i>Toshiba Corp. v. Imation Corp.</i> , 681 F.3d 1358 (Fed. Cir. 2012)	16
<i>Virnetx, Inc. v. Cisco Sys., Inc.</i> , 767 F.3d 1308 (Fed. Cir. 2014)	13
<i>Vitronics Corp. v. Conception, Inc.</i> , 90 F.3d 1576 (Fed. Cir. 1996)	2
<i>Woods v. DeAngelo Marine Exhaust, Inc.</i> , 692 F.3d 1272 (Fed. Cir. 2012)	16

I. INTRODUCTION

Gillette's proposed constructions seek to rewrite the scope of the claims by redefining Gillette's purported invention. For instance, there should be no dispute that all claims require *three separate* razor blade coating layers. Yet through its proposal for the "overcoat layer" term, Gillette seeks to write that layer out of the claims. As for its constructions of the "amorphous material" and "doped with another element" terms, here too Gillette tries to alter claim scope to cover razor coatings made out of materials that it either expressly disclaimed (*i.e.*, crystalline materials) or that no person of skill in the art would understand to be within the claim scope (*i.e.* two-element materials having no additives). Defendants' proposals, on the other hand, properly define the claim terms both as they would be understood by a person having ordinary skill in the art and consistently with Gillette's express statements to the public. Accordingly, Defendants' respectfully request that Gillette's attempts to rewrite its claimed invention be rejected, and Defendants' proposed constructions be adopted.

II. "AMORPHOUS MATERIAL" (CLAIMS 1, 20, 24)

Offering a proposed construction that incorporates a made-up phrase with no known scientific meaning, Gillette attempts to rewrite the meaning of the claim term "amorphous" to cover crystalline structures. But Gillette's re-imagining of the term "amorphous" finds no support in the intrinsic record, let alone Gillette's own extrinsic evidence. Indeed, nothing Gillette points to changes the fact that, during prosecution, Gillette repeatedly stated that "amorphous material ... exclude[s] crystalline material." Accordingly, the Court should adopt Defendants' construction, which clarifies that amorphous material must be noncrystalline—*i.e.* "having no detectable crystal structure." D.I. 289 at 15-18.

A. The Intrinsic Evidence Supports Defendants' Construction, Not Gillette's

Simply put, Gillette has invented the phrase “no *long-range crystalline order.*” No such term exists in any of the scientific literature cited by either party (or, for that matter, in the intrinsic evidence). Instead, aside from in Gillette's proposal, the phrase appears only in the declaration of Gillette's expert, who explains it refers to materials that have “some smaller crystallites.” D.I. 287 ¶ 32; D.I. 286 at 8. Thus, according to Gillette and its expert, “amorphous material” can include crystalline material, as long as the crystals are not too large. *Id.*

Notably, however, Gillette discusses the intrinsic evidence *after* presenting its arguments relating to the extrinsic evidence—despite the Federal Circuit's clear instruction that unambiguous intrinsic evidence, when available, is the best evidence. *See, e.g., Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996) (“Only if there [is] still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence, should the trial court [] resort[] to extrinsic evidence . . .”). But here, the intrinsic evidence leaves no doubt as to the meaning of the term. Rather, consistent with Defendants' construction, the prosecution history includes a clear disclaimer as to all “crystalline materials”:

polytetrafluoroethylene (PTFE) thereon. The **claims have been amended** to recite that the **hard coating is made of “amorphous material,”** and, so limited, exclude crystalline material. Such

D.I. 249, Ex. C at GILLETTE-DSC-0220771; *see also id.* at 810, 826, 844; D.I. 289 at 16-17.

Indeed, Gillette quotes this precise line from the prosecution history in its opening brief, arguing that it “reinforce[s] the distinction between ‘amorphous’ and crystal materials.” D.I. 286 at 8-9. Yet, despite that unmistakable disclaimer as to crystalline material—which Gillette appears to recognize—Gillette argues that the prosecution history somehow supports its proposal that “amorphous materials” may have “some periodic structure” (*i.e.* “[g]rain size” or

“crystallinity”). *Id.* at 8. Gillette is wrong. Its disclaimer is clear and dispositive—the term “amorphous” is contrasted with materials that have “crystalline structure,” and Gillette’s attempt to walk back its prosecution disclaimer should be rejected. *Tech. Props. Ltd. LLC v. Huawei Techs. Co.*, No. 2016-1306, --- F.3d. ----, 2017 WL 836597, at *5-6 (Fed. Cir. Mar. 3, 2017) (affirming district court’s narrow construction of “entire oscillator” as “properly include[ing] both of the patentee’s clear disclaimers” based on arguments to distinguish prior art).

Gillette also identifies other intrinsic evidence that it says permits “amorphous material” to include crystalline material. Putting aside that none of these can broaden the repeated disclaimer by Gillette, none of these actually support Gillette’s construction. Importantly, Gillette relies on the prior art Goel reference (identified as the ’648 patent). D.I. 286 at 9. But nothing in Goel mentions “long-range crystalline order.” Instead, as Gillette admits, Goel defines “amorphous” as “a random structure of arrangement of atoms in a solid state that results in *no long range regular ordering, and no crystallinity or granularity.*” *Id.* at 9; D.I. 249, Ex. C at GILLETTE-DSC-0220874, 4:39-42.¹ Further, Gillette admits that Goel is part of the intrinsic record and that this definition is “consistent with the ordinary meaning of the term.” D.I. 286 at 9. Given Gillette’s admissions, Goel’s definition of amorphous provides a suitable and appropriate alternative to Defendants’ construction that the Court can adopt.

Gillette’s remaining intrinsic evidence similarly shows that “amorphous material” has no crystallinity. With regard to the claims, Gillette argues that “amorphous material” must include diamond-like carbon (DLC) because dependent claim 2 requires that the hard coating be DLC. D.I. 286 at 6. Gillette makes the same argument with regard to the specification, pointing out that it says amorphous materials include DLC and amorphous diamond. *Id.* at 7. But Gillette

¹ All emphasis has been added unless otherwise noted.

cannot and does not argue that Defendants’ construction of amorphous material excludes DLC or amorphous diamond. In fact, as confirmed by Gillette’s own references, DLC has no detectable crystal structure. D.I. 287, Ex. 7 at 45 (stating that “[e]lectron diffraction indicates [DLC films] completely amorphous structure.”); *see also* Watts Ans. Decl. ¶ 13. And, even if some types of DLC could include some crystalline material, that result would not mandate Gillette’s construction because there are at least some types of DLC which are noncrystalline. *See, e.g.*, D.I. 287, Ex. 7 at 45; Ex. 14 at 2175 (“In *noncrystalline* materials such as DLC, the number of surface atoms must be estimated without use of crystallography.”); Ex. 15 at 497 (“Deposition conditions favoring ions produce instead diamondlike carbon (DLC), a *noncrystalline* carbon or hydrocarbon solid with significant sp^3 bonding.”). Watts Ans. Decl. ¶ 13. In short, Defendants’ construction is the only construction consistent with the claims, specification, and Gillette’s disclaimer.

Gillette’s remaining discussion of the intrinsic evidence focuses on the Handbook of Physical Vapor Deposition Processing (“PVD Handbook”). D.I. 286 at 8. The definition of “amorphous” that Gillette quotes, however, supports Defendants’ construction, as it requires “[a] material without a periodic structure *that would be revealed by x-ray diffraction*”—in other words, a material with “no *detectable* crystalline structure.” *See* D.I. 286 at 8 (citing D.I. 249, Ex. E at 767); *see also* Watts Ans. Decl. ¶ 11 (noting that x-ray diffraction is a commonly-used method to detect crystalline structures in a material). And while Gillette complains that the evolution of technology may make it possible to detect crystals now that may not have been detectable in 2000, *see* D.I. 286 at 11, that argument misses the point. Gillette’s disclaimer is clear and unmistakable; it surrendered any claim scope that includes crystalline material when it stated that, “so limited [with “amorphous material”], the claims exclude crystalline material.”

D.I. 249, Ex. C at GILLETTE-DSC-0220771, 810, 826, 844. Gillette cannot rewrite the claim now.

Gillette's argument that the PVD Handbook equates "a grain size of less than about 30 Å" with "material lacking *long-range* crystalline order," D.I. 286 at 8, fails for similar reasons. Setting aside the fact that the PVD Handbook (like every other reference Gillette cites) does not include the phrase "long-range crystalline order," Gillette disclaimed crystals during prosecution. *See, e.g., Tech. Props. Ltd.*, 2017 WL 836597, at *5 (recognizing that "patentees may surrender more than necessary" to avoid a prior art reference and that courts should "hold patentees to the actual arguments made, not the arguments that could have been made"). Further, as the Goel definition states, amorphous material is one that has "*no* crystallinity or granularity." In short, Gillette chose to draft the claims such that "as limited," they excluded crystalline material of any size, and Gillette should be held to this clear and unmistakable disclaimer.

B. Gillette's Construction Finds No Support In The Extrinsic Evidence

Attempting to side-step its disclaimer, Gillette proffers over two dozen extrinsic sources to support its construction, but not one of these sources includes Gillette's invented term "long-range *crystalline* order." Instead, these sources use a different term, "long-range order." However, like a shell game, Gillette conflates "lacking long range *crystalline* order" with "lacking long-range order" in an apparent attempt to recapture crystalline material within the scope of its claims. An examination of this extrinsic evidence shows why Gillette's attempt should be rejected.

As an initial matter, the term "long-range order" is a technical term of art that refers to a repeating atomic pattern found in crystals of all sizes. Watts Ans. Decl. ¶ 5. Thus, as Gillette's extrinsic evidence confirms, even polycrystalline materials have "grains (small crystals)" that exhibit "long-range order" within each grain. D.I. 287, Ex. 1 at 615; Watts Ans. Decl. ¶ 5. The

phrase “long-range *crystalline* order,” on the other hand, is not found in the art. *See* Watts Ans. Decl. ¶ 4. Instead, as explained above, it is a phrase invented by Gillette and its expert to describe materials that have small crystals. *See* D.I. 286 at 8; D.I. 287 ¶¶ 32, 39, 48.

Gillette’s extrinsic evidence—already entitled to minimal weight²—also confirms that “long-range order” does not mean “long-range *crystalline* order” and that amorphous materials are noncrystalline. Tellingly, the phrase “long range *crystalline* order” is conspicuously absent from each and every one of the over two dozen references and cases on which Gillette relies to support its proposal. For example, the first five extrinsic references (like the other six), only use the phrase “long-range order,” *not* “long-range *crystalline*” order:

- “Solids that have short-range order but lack *long-range order* are called amorphous.” D.I. 287, Ex. 1 at 615.
- “[A]morphous solid [is] [a] solid that lacks *long-range order* in the arrangement of its atoms.” *Id.*, Ex. 2 at Index/Glossary I.2.
- “Because the particles of an amorphous solid lack any *long-range order*....” *Id.*, Ex. 3 at 416.
- “In amorphous solids, *long-range order* is absent....” *Id.*, Ex. 4 at 3.
- “A material is amorphous when it has no *long-range order*....” *Id.*, Ex. 5 at 1.

Similarly, Gillette’s cited cases only refer to “long-range order.”

- “The Court adopts Takeda’s proposed construction of the term ‘amorphous compound,’ which is ‘non-crystalline solid that lacks the *long-range order* characteristic of a crystal.’” *Takeda Pharm. Co. Ltd. et al. v. Handa Pharm., LLC*, No. C-11-00840 JCS, 2012 WL 1243109, at *25, 32, 35 (N.D. Cal. April 11, 2012).
- “An amorphous [active pharmaceutical ingredient] is disordered, lacking the *long-range order* found in crystalline drugs.” *Cephalon, Inc. v. Watson Pharm., Inc.*, 769 F. Supp. 2d 761, 766 (D. Del. 2011), *aff’d*, 446 F. App’x 306 (Fed. Cir. 2011).

² *See, e.g., Phillips*, 415 F.3d at 1317 (“[W]hile extrinsic evidence can shed useful light on the relevant art, we have explained that it is less significant than the intrinsic record in determining the legally operative meaning of claim language”) (citations and internal quotations omitted).

- “**Long-range order** indicates the periodicity of a silicon matrix over the entire extent of the crystal lattice.” *Solarex Corp. v. Arco Solar, Inc.*, 805 F. Supp. 252, 261 (D. Del. 1992).
- “[T]he term ‘crystalline’ . . . means ‘a solid form having a **long range periodic ordered structure** extending in three dimensions.’” *Pfizer Inc. v. Dr. Reddy’s Labs. Ltd.*, No. CIV. 09-943-LPS, 2011 WL 767849, at *7 (D. Del. Feb. 28, 2011).

See D.I. 286 at 5 n.4, 6 n.5, and 10 n.8. Indeed, the only purported evidence that Gillette offers that actually uses the phrase “long range **crystalline** order” is an unsupported assertion from its expert, which should be given no weight whatsoever. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (“[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.”).³

In short, Gillette provides this Court with no support for the proposition that “lack of long-range order” equates to “lack of long-range **crystalline** order.” And even more importantly, none of these references equate “amorphous” and “material having only small crystals.” Instead, as Gillette’s evidence and case law confirms, amorphous means “noncrystalline”:

- “Most solids are crystalline. Inasmuch as they have a three-dimensional periodic atomic arrangement; some solids (such as glass) lack this periodic arrangement and are **noncrystalline, or amorphous**.” D.I. 287, Ex. 1 at 613.
- “In addition to the terms amorphous solid and glass, other terms in use include **noncrystalline** solid and vitreous solid.” *Id.* at 637.
- “Even metals, which are known primarily in the crystalline state, have been made into **amorphous solids**. The trick is to **bypass crystallization** by cooling molten material very fast.” *Id.*, Ex. 2 at 718.

³ In its brief, Gillette also attempts to confuse the issue by implying that the terms “short-range order” and “long-range order” are opposites, with amorphous materials having short-range order and crystalline material having long-range order. D.I. 286 at 4-5. But as Gillette’s own evidence and proffered expert testimony confirm, the terms refer to two different concepts. See, e.g., *Solarex*, 805 F. Supp. at 255; D.I. 287 ¶ 25; see also Watts Ans. Decl. ¶ 7. Short-range order refers to the precise arrangement of one atom with its nearest neighbors, whereas long-range order refers to a repeating pattern of atoms that extends through a crystal. *Id.* ¶¶ 5, 7. Thus, amorphous materials have short-range order, whereas crystalline materials have both short-range order **and** long-range order. *Id.* ¶ 7.

- “Solids can be either crystalline or *amorphous (noncrystalline)*.” *Id.*, Ex. 3 at 414.
- “Amorphous compound” construed as a “*non-crystalline solid . . .*” *Takeda*, 2012 WL 1243109 at * 25.

See also D.I. 287, Ex. 1 at 638, Ex. 4 at 3, 7; Watts Ans. Decl. ¶ 9.

In sum, Gillette’s attempt to redefine the term “amorphous material” so that it can include some crystalline materials is belied by its own evidence, and more importantly, contradicts Gillette’s clear disclaimer during prosecution. See *Profectus Tech. LLC v. Huawei Tech. Co.*, 823 F.3d 1375 (Fed. Cir. 2016) (“Extrinsic evidence may not be used ‘to contradict claim meaning that is unambiguous in light of the intrinsic evidence.’”) (quoting *Phillips*, 415 F.3d at 1324). Accordingly, Gillette’s proposal should be rejected in favor of Defendants’ construction of “amorphous” or, alternatively, Goel’s full definition,⁴ which Gillette has endorsed.⁵

III. “OVERCOAT LAYER OF A CHROMIUM CONTAINING MATERIAL” (CLAIMS 1, 20, 24, 28, 35)

Gillette’s proposed construction and its opening brief also show that Gillette is trying to rewrite the “overcoat layer” term as simply any layer over a hard coat, but that too is contrary to the intrinsic evidence. Gillette tries to do this so that it can assert that a single-layer hard coat can be broken into two “layers,” thereby removing the critical and express claim requirement of a three-layer structure. In doing so, Gillette must interpret the “overcoat” requirement out of the claims by construing the limitation in a way that is inconsistent with the surrounding claim language, as well as the intrinsic record. But the intrinsic evidence and Gillette’s own

⁴ The alternative construction for “amorphous material” would be “material having a random structure or arrangement of atoms in a solid state that results in no long range regular ordering, and no crystallinity or granularity.” D.I. 249, Ex. C at GILLETTE-DSC-0220874, 4:39-42.

⁵ To the extent Gillette argues that its construction and “long range order” are the same thing, for the reasons stated, that is incorrect. Further, even if that were possible (and it is not), Gillette identifies no support for redefining a known term of art so that it may rewrite the claims to cover small crystals.

admissions clearly and repeatedly require that the “overcoat layer” be an intermediate layer that improves adhesion between the hard coat and PTFE. *See, e.g.* D.I. 289 at 9-13; D.I. 1 ¶ 17; D.I. 98 ¶ 28 (Gillette Complaint). As such, Gillette’s proposed construction should be rejected.

A. This Disputed Term Warrants Construction By The Court, Not The Jury

Gillette argues that the disputed term does not require construction because the plain meaning would be apparent to a jury. According to Gillette, a jury would interpret the term to mean “on top of a layer below” and, therefore, the Court need not define the term. D.I. 286 at 12. But as shown by the parties’ opening briefs, there is no agreement as to the meaning of the “overcoat” term (D.I. 286 at 11-17; D.I. 287 at 8-15), and thus the Court, rather than the jury, should decide this legal question of claim construction. *O2 Micro Int’l. Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008).

Tellingly, Gillette does not even try to support the “jury plain meaning,” other than to make a conclusory assertion that “the jury will have no trouble understanding” the term. D.I. 286 at 12. Setting aside its lack of support, its “jury plain meaning” of “a layer on top of a layer below” suffers from the same deficiencies as its proffered “ordinary meaning” construction (addressed below)—it improperly reads the term “overcoat” out of the claims.

B. Contrary To Gillette’s Arguments, The Overcoat Term Has No “Ordinary Meaning”

Gillette’s fallback argument is that the phrase “an overcoat layer of chromium containing material” has a “plain and ordinary meaning.” D.I. 286 at 12; *see also* D.I. 249, Ex. A at 2 (“Plaintiff proposes the ordinary meaning of the [overcoat] term as . . .”). Specifically, Gillette argues that the “overcoat layer” portion of the disputed term means “a layer on top of the layer of hard coating.” Gillette, however, offers no support for this alleged plain and ordinary meaning—*i.e.* a “widely accepted” or “customary” meaning given a term in the art. *See Phillips*,

415 F.3d at 1314 (identifying the “ordinary meaning” as a “widely accepted meaning”); *Honeywell Int’l. Inc. v. Universal Avionics Sys. Corp.*, 488 F.3d 982, 991 (Fed. Cir. 2007) (equating “ordinary meaning” to “a customary meaning of [the] term within the art”). As an example, Gillette cites to nothing within the literature that proffers a definition for (or even uses) the disputed “overcoat layer” term. *See generally* D.I. 286 at 12-14.

In short, there is no “plain and ordinary meaning” for the disputed term because Gillette created the term to describe a specific layer with specific characteristics. *See* D.I. 289 at 9-13. Accordingly, the proper construction must be determined from the intrinsic evidence. *Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004) (“[I]f a disputed term has no previous meaning to those of ordinary skill in the prior art, its meaning, then, must be found elsewhere in the patent.”) (citations and internal quotations omitted); *Phillips*, 415 F.3d at 1313 (Even if a term has an ordinary meaning, “[w]e cannot look at [that meaning] ... in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.”).

C. Gillette Ignores Controlling Intrinsic And Extrinsic Evidence That Shows The Overcoat Layer Is An Intermediate Adhesive Layer

Gillette argues that the overcoat layer should be construed as “a layer on top of the layer of hard coating.” D.I. 286 at 12. Gillette’s construction fails, however, because it wrongly writes the critical term “overcoat” out of the claims, and ignores the intrinsic evidence, as well as reliable extrinsic evidence from Gillette’s own patents and admissions, which confirm that the overcoat layer must be an intermediate adhesive layer. *See Indacon, Inc. v. Facebook, Inc.*, 824 F.3d 1352, 1357 (Fed. Cir. 2016) (noting that claim terms that “have no plain or established meaning to one of ordinary skill in the art ... cannot be construed broader than the disclosure in the specification”).

Despite arguing “ordinary meaning,” Gillette’s construction attempts to write the term “overcoat” out of the claims. As shown below, Gillette merely reuses already-existing claim language to define “overcoat layer”:⁶

Gillette’s proposal

a layer of hard coating on said cutting edge, said hard coating being made of amorphous material containing carbon,
a layer on top of the layer of hard coating
 an ~~overcoat layer~~ of a chromium containing material on said layer of hard coating, and

But the phrase “on said layer of hard coating” (shown in orange) is nearly identical to the limitation’s requirement that the overcoat layer already be “on said layer of hard coating” (orange underlining). Thus, when that repetitive language is stripped from Gillette’s proposal, Gillette’s construction is that an “overcoat layer” is simply a “layer.” That result, however, is inconsistent with the express language and structure of the claims, and wrongly equates the meaning of “overcoat layer” with the separate generic term “layer.” *Info-Hold, Inv. v. Muzak LLC*, 783 F.3d 1365, 1374 (Fed. Cir. 2015) (rejecting construction that would read a word out of the claims because “[o]ur precedent prohibits us from adopting such a construction”). For example, if layer and overcoat layer mean the same thing, then the earlier limitation beginning with “a layer of hard coating,” means “a [overcoat layer] of hard coating,” which defies the structure of the claims, and conflates different claimed layers.

Simply put, the claims explicitly require that the hard coating and the overcoat layer be two different layers. D.I. 249, Ex. B at claims 1, 20, 24, 28, 35. Indeed, during prosecution,

⁶ For simplicity, Defendants’ focus on the limitation that appears in claims 1, 20, and 24 (“an overcoat layer of a chromium containing material on said layer of hard coating”), but the arguments are the same for the comparable term in claims 28 and 35 (“an overcoat layer of a chromium containing material on the layer of the hard carbon containing material”).

Gillette distinguished between the two layers and stated that they were not made of the same material. D.I. 249, Ex. C at GILLETTE-DSC-0220771-72, 810-11, 826-27, 844-45 (arguing that the overcoat layer is “softer than the hard coating layer”). As reflected by the phrase “improves adhesion,” Defendants’ proposed construction properly reflects that the overcoat layer and the hard coating must be made of different materials. Indeed, if there are two layers of the same material, then a person of ordinary skill in the art would understand that there is no overcoat layer because a material cannot improve adhesion to itself. Watts Ans. Decl. ¶ 18. That is why, for example, Gillette’s subsequent patent application states that you can have multiple hard coat layers without an overcoat layer.⁷ D.I. 289 at 13-14; *id.* at Ex. 4 at PACE-037273.

Nor is Gillette’s attempt to erase the “overcoat” term from the plain language of the claims supported by the specification. Instead, as explained in Defendants’ opening brief, the overcoat layer is a separate and intermediate layer that improves adhesion between the hard coating and the PTFE outer layer. *See* D.I. 289 at 9-10; *see also, e.g.*, D.I. 249, Ex. B at Fig. 1 (depicting separate hard coating, overcoat, and outer layer); *id.* at Abstract (same); 1:38-44 (same); 1:45-60 (same); 1:61-66 (same); 2:37-3:48 (same). Importantly, according to the Summary of the Invention, “[t]he use of a chromium containing overcoat layer provides improved adhesion of the [PTFE] outer layer to the hard coating.” *Id.* at 2:14-16.

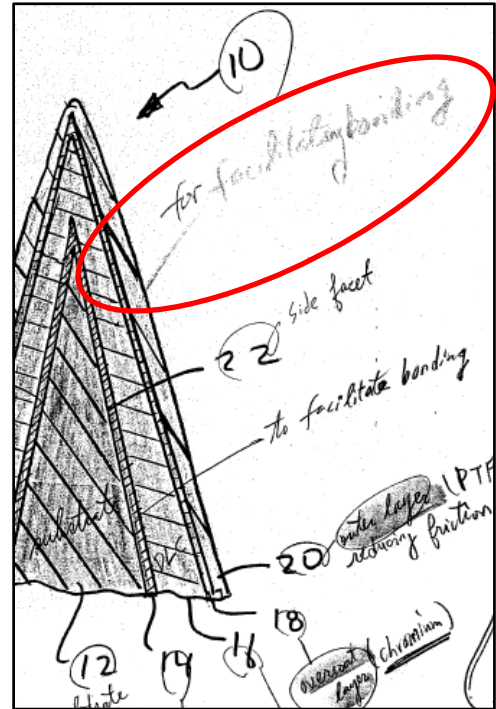
Gillette tries to downplay this evidence by arguing that improved adhesion is only a preferred embodiment. First, Gillette argues that the Summary of the Invention’s use of the phrase “may include” qualifies improved adhesion. D.I. 286 at 15 (citing D.I. 249, Ex. B at 2:13-14). But it does not; the critical sentence unequivocally states that the “overcoat layer provides improved adhesion of the [PTFE] outer layer to the hard coating layer”; that is the only

⁷ For these reasons, Defendants disagree with Gillette’s argument that “Defendants no longer contend that the ‘overcoat layer’...is softer than the hard coating layer.” D.I. 286 at 14, n.10.

recited advantage of the overcoat layer in the Summary section. *Id.* at 2:14-16. Because all claims require the “overcoat layer,” they all require that it provide improved adhesion. *See Virnetx, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1317-18 (Fed. Cir. 2014) (“The fact that the Summary of the Invention gives primacy to these [functional] attributes strongly indicates that the invention requires [them].”); *Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1320 (Fed. Cir. 2005) (adopting construction including claim term’s function in part because specification taught function was an “object of the invention”).

Gillette also argues that improved adhesion is an embodiment because the patent describes reduced tip rounding as an embodiment. D.I. 286 at 15-16. That is incorrect. While tip rounding may be a preferred embodiment, improved adhesion is not for the reasons discussed herein. *See, e.g.*, D.I. 249, Ex. B at 2:14-16. Thus, Gillette’s reliance on the description of a “Particular Embodiment” as having both improved adhesion and reduced tip rounding is inapt. D.I. 286 at 15-16 (citing D.I. 249, Ex. B at 3:5-8). Further, Gillette ignores language in the specification that explains reduced tip rounding may result from depositing the overcoat layer in a way involving “**compressive stress** (as opposed to a tensile stress).” D.I. 249, Ex. B at 3:41-45; Watts Ans. Decl. ¶ 17. This is informative because there are several dependent claims that Gillette ignores that are expressly or indirectly directed to reduced tip rounding. D.I. 249, Ex. B at claim 18 (requiring “cutting edge has less rounding with repeated shaves than it would have without said overcoat layer”); *id.* at claims 10, 27 (requiring “compressively stressed” overcoat layer). *Phillips*, 415 F.3d at 1315 (“[A] dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim”). By contrast, none of the dependent claims add the limitation “improved adhesion” (as the “overcoat layer” in all claims already requires it).

The file history of the '513 patent also makes abundantly clear that the adhesion-promoting “overcoat” is not merely a preferred embodiment. D.I. 289 at 11-13. Indeed, the original figure shown to the right, which Gillette ignores, labels the overcoat “for facilitating bonding”—not “for facilitating bonding and for reducing tip rounding.” Ex. 16 at DSC148566.



Further, while Gillette argues that it distinguished the claimed invention on the basis of reduced tip rounding, Gillette also repeatedly discussed the adhesion-promoting role of the overcoat layer in every response to the examiner. D.I. 249, Ex. C at GILLETTE-DSC-0220772, 811, 827, 846 (conceding that the Lane reference discloses an “adhesion promoting layer II containing chromium” and distinguishing the Hahn reference as lacking that layer). Thus, the file history confirms adhesion-promotion as an admitted characteristic of the claimed overcoat layer.

Gillette subsequently confirmed this fundamental aspect of the overcoat layer in later prosecutions. During prosecution of the '513 Japanese counterpart, the inventors described the “concept of their invention” as “interposing a chromium containing coating between the coating containing diamond-like carbon (DLC) [hard coating] and the lubricious polymer coating of PTFE [outer layer] *to improve the adhesion between* the” DLC and PTFE layers. D.I. 289, Ex. 3 at PACE-037217; *see also id.* at PACE-037216 (stating that the chromium overcoat layer “*improves the adhesion* of the outer [PTFE] layer to the hard coating layer”); D.I. 290 ¶ 24. Similarly, in a later-filed Gillette patent application, which “incorporate[s] by reference the

overcoat layer discussion in [the '513 patent],” four of the named '513 patent inventors admitted that the overcoat layer is unnecessary if the hard coating (which, in this application, can have multiple layers) already sufficiently adheres to the PTFE layer. *See* D.I. 289 at 13-14; *see also id.* at Ex. 4 at PACE-037271, 73 (claiming a razor blade “wherein there is no overcoat layer” because “the [PTFE] layer adheres well to the chromium-doped DLC layer”); D.I. 290 ¶ 24. Those four inventors swore an oath that these statements “are true.” D.I. 289, Ex. 4 at PACE-037279-81.

Gillette relies on a number of cases relating to “preferred embodiments,” but all of them are distinguishable because none involved an attempt to read a limitation (here, “overcoat”) *out* of the claims, and none involved claim terms where the proposed construction reflected the invention itself. *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372-73 (Fed. Cir. 2014) (declining to limit “datalink” to “wireless” when the intrinsic evidence did not “suggest[] that the wired connection is important, essential, necessary, or the ‘present invention’”); *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1325-26 (Fed. Cir. 2008) (declining to limit claimed capillary passages to “uniform” passages where uniformity was in some, but not all, embodiments); *St. Clair Intellectual Property Consultants, Inc. v. Apple, Inc.*, C.A. No. 10-982-LPS, 2012 WL 3238252, at * 3-4 (D. Del. Aug. 7, 2012) (declining to limit execution to “CPU execution” where not mandated by the specification); *Copy Prot. LLC v. Netflix, Inc.*, C.A. No. 14-365-LPS, 2015 WL 4639954, at * 6 (D. Del. Aug. 5, 2015) (declining to limit claimed step to “at the server” because not mandated by the intrinsic evidence).⁸

⁸ And to the extent these cases involve a “disavowal” of claim scope, that is also different from the situation here where Gillette used the term “overcoat layer” in a very specific way—to describe an adhesive layer between the hard coating and the PTFE layer. Thus, there is not, and never was, any claim scope to be disavowed. Rather, the evidence (including the original

Gillette argues that even if “improved adhesion” is a primary part of the invention, its inclusion in the construction adds an improper “functional feature ... [in] a structural element.” D.I. 286 at 15. As support, Gillette contends the “Federal Circuit has repeatedly instructed that courts should not read a function or purpose into a structural term.” *Id.* Gillette is incorrect. In fact, the Federal Circuit teaches (in cases Gillette cites) that “defining a particular claim term by its function is not improper” *Hill-Rom Servs.*, 755 F.3d at 1374-75 ; *see also Funai Elec. Co. v. Daewoo Elecs. Corp.*, 616 F.3d 1357, 1366 (Fed. Cir. 2010) (functional language proper when “the explanation aids the court and the jury in understanding the term as it is used in the claimed invention”). In any event, Gillette’s cases are distinguishable. In each of them, unlike here, the disputed term had a well-understood meaning in the art; moreover, none involved intrinsic evidence that described the function as the primary and fundamental advantage of the purported invention, or involved an attempt to read a limitation out of a claim. *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1368 (Fed. Cir. 2012) (“plain meaning” of claims and intrinsic evidence covered one- and two-sided DVDs, and patentee did not otherwise limit to two-sided DVDs); *Woods v. DeAngelo Marine Exhaust, Inc.*, 692 F.3d 1272, 1284 (Fed. Cir. 2012) (functions were characteristic of only some embodiments for “elongated outer shell” and “inwardly tapered section” terms); *Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367-68 (Fed. Cir. 2001) (“ordinary and accustomed meaning” of “substantially uniform” not limited because nothing in intrinsic evidence required the functional limitation or identified the function as “the invention”).

In contrast, courts have routinely construed terms based on their function or purpose where, as here, doing so is supported by the intrinsic evidence. *See, e.g., Tech. Props. Ltd.*, 2017 WL 836597, at *5-6 (holding that the term “an entire oscillator disposed upon said integrated drawing of Figure 1, which labels the layer “for facilitating bonding”) makes clear that the overcoat layer has been and always was an adhesive layer. *See, e.g., Ex. 16 at DSC148566.*

circuit substrate” included the functional limitations “an oscillator . . . [1] that does not require a command input to change the clock frequency and [2] whose frequency is not fixed by an external crystal”); *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1375-76 (Fed. Cir. 2009) (affirming construction of “spike” as “an elongated structure having a pointed tip *for piercing the seal*...” because the specification repeatedly described “the spike as a pointed instrument for the *purpose of piercing a seal* inside the valve”); *Medrad*, 401 F.3d at 1320 (Fed. Cir. 2005) (construing “substantially uniform magnetic field” as “a field that is substantially uniform *to obtain useful MRI images*” when the definition was supported by the claim language and specification); D.I. 289 at 15 (citing *Virnetx*, 767 F.3d at 1317-19 (Fed. Cir. 2014)).

Finally, Gillette argues that Defendants’ construction is “contrary to the plain language of the claims” because Defendants’ use of the word “intermediate” could permit the overcoat layer to be between the hard coating and substrate. D.I. 286 at 16-17. Gillette is incorrect; when Defendants’ construction replaces the disputed term, it is clear on its face that the location of the overcoat must be between the hard coating and the PTFE. Moreover, the clarification that the layer is an adhesive layer between the two further leaves no doubt that Defendants’ proposed construction refers to and preserves the separate identity of the “overcoat” layer, consistent with the three-layer structure required by the claims.

Given the clear language of the claims that an “overcoat layer” is not just a “layer”, and the clear statements in the specification, file history, and relevant extrinsic evidence, Defendants’ construction clarifying that the overcoat layer is an intermediate layer that improves adhesion is well-supported and appropriate. For these reasons, Defendants’ respectfully request that the Court adopt Defendants’ construction.

IV. “DOPED WITH ANOTHER ELEMENT” (CLAIMS 19, 23, 28, 35)

Gillette attempts to broaden the “doped” term to cover any material made up of more than one element. Gillette seeks such a construction because Defendants’ products have a hard coating that is a two-element *material*. The term “doped,” however, has a plain meaning under which a two-element material is not a “material *doped with* another element,” and nothing in the intrinsic evidence says otherwise. Accordingly, Gillette’s proposal should be rejected.

A. Gillette Ignores The Plain And Ordinary Meaning Of The Term Doped, Which Was Not Altered By Any Intrinsic Evidence

As Defendants’ opening brief makes clear, the term “doped with another element” has a plain and ordinary meaning to a person of skill in the art that includes an understanding both of what it means to “dope” (*i.e. introducing* the dopant to a host material to modify the host material’s properties), as well as of the *amount* of the doped element (*i.e. a small amount*). D.I. 289 at 18-19. Thus, in absence of an “express intent to impart a novel meaning . . . , the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art.” *Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308, 1314 (Fed. Cir. 2003). Here, however, Gillette ignores this plain meaning and does not argue that the patentees acted as their own lexicographers; instead, Gillette argues that any element is a dopant when added by any method, in any amount, and for any purpose. Gillette’s unconventional broad definition lacks support.

Gillette’s construction ignores the well-known meaning of “doped” to improperly cover layers made by combining carbon and another element to form a *new material*, where the other element is not merely a dopant, but is a part of the material itself.⁹ It does so in an attempt to

⁹ The term “element” refers to the simplest fundamental chemical substance that cannot be broken down chemically into anything simpler (e.g. oxygen, silicon, carbon). The smallest particle that retains the characteristics of an element is known as an atom. The term “material”

expand the scope of its claims such that a two-element material would be considered “doped.” To illustrate this point, if a layer is made of silicon carbide, a hard coating material disclosed in the ’513 patent, that layer is not 100% carbon and therefore it satisfies Gillette’s construction. D.I. 286 at 18-19 (explaining a hard carbon coating is “doped” when it is not 100% carbon). But silicon carbide is not “a carbon-containing material doped with silicon”—*i.e.* it is not made by introducing silicon into a carbon-containing material to modify its properties. Watts Ans. Decl. ¶ 21. Rather, silicon carbide results from reacting silicon and carbon—two separate elements—in a way that creates a new material with its own distinct properties and structure. *Id.* ¶ 21.

Gillette also argues that “[t]he claim language [and specification] **do[] not set a limit** on the amount of the additional element that may be doped.” D.I. 286 at 18 (arguing carbon must simply be less than 100%); *id.* at 19 (arguing specification accords with claims). Thus, by its own admission, Gillette would consider any carbon-containing material that is not 100% carbon, *e.g.*, 0.01% carbon and 99.99% of another element, to be “doped” by the non-carbon element. *Id.* But no person of skill in the art would consider such a carbon-containing material to be “doped” with that element. D.I. 289 at 19 (citing D.I. 290 ¶ 38); Watts Ans. Decl. ¶ 19. In that regard, while Gillette agrees that “dopants” are “additives” (D.I. 286 at 18-19 (citing D.I. 249, Ex. B at 2:57-61)). Gillette fails to note that “additive” is a well-known term of art whose definition demonstrates the improper breadth of Gillette’s proposal. D.I. 289, Ex. 10 (“substance added to another *in small quantities* to *effect a desired change* in properties”); *id.* at Ex.

refers to a substance made up of one or more elements that has properties resulting from its make-up as well as how the atoms within it are bonded together; as an example, graphite and diamond are both materials that are made up of the element carbon, and their differing properties result from how the carbon-to-carbon bonds are structured within the material. Watts Ans. Decl. ¶ 20.

11(“substance added *in small amounts* to something else *to improve, strengthen, or otherwise alter* it”); D.I. 290 ¶¶ 35-36.

Gillette’s reliance on the Goel reference is misplaced as it too supports Defendants’ construction. First, Goel confirms that “doped” means *introducing* the dopant to a host material to modify its properties. *See, e.g.*, D.I. 249, Ex. C at 4:63-5:34 (dopant is “interspersed” within host material); *id.* at 6:60-62 (“The properties of the two network DLN may then be tailored by adding dopant.”); *id.* at 6:18-22 (material “doped with a dopant to optimize compatibility and adherence”). As for Goel’s reference to a dopant “even at concentrations as high as 50 atomic %”, a person of skill would not understand that to mean the ’513 patent uses “doped” to encompass addition of elements in an unlimited amount, as Gillette argues. Rather, a person of skill would understand that discussion as concerning over-doping the newly-disclosed DLN films in order to stress test them. Watts Ans. Decl. ¶¶ 22-23. Nor does the ’513 patent refer to that portion of Goel as an example of doping. *Hill-Rom*, 755 F.3d at 1371 (ordinary meaning not altered unless patentee acts as own lexicographer or clearly disavows claim scope).¹⁰

In short, Gillette’s construction is simply too broad. Therefore, Defendants’ construction, which is consistent with the plain meaning and intrinsic evidence, should be adopted.

V. CONCLUSION

Based on the foregoing and Defendants’ earlier-filed brief, Defendants respectfully request that the Court adopt each of Defendants’ proposed constructions.

¹⁰ Gillette also argues again that it is improper to “read a functional limitation into a structural element.” D.I. 286 at 20. As an initial matter, “introduced ... to modify certain properties” is not a functional limitation; rather, it refers to how the dopant is added—*i.e.* introduced into a host material, as opposed to in a chemical reaction that changes one material into another. Watts Ans. Decl. ¶ 21. And even if the construction did describe a function, Gillette is wrong that it is improper to construe claims in light of their functions. *See supra* Section III.B.

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